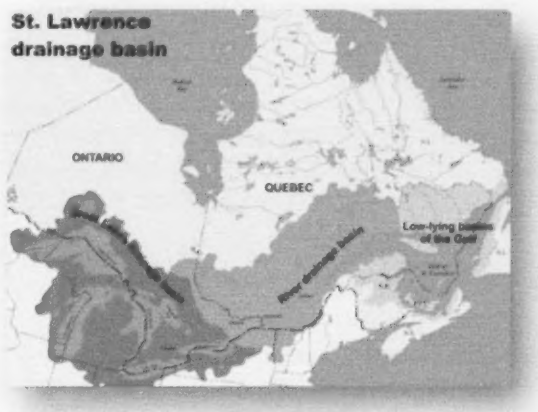
INFRASTRUCTURE SPOTLIGHT: THE GREAT LAKES AND ST. LAWRENCE WATERSHEDS

The Great Lakes and St. Lawrence River Basin is one of the largest freshwater systems in the world. Covering more than 1.6 million km^2 – roughly the size of the province of Quebec – this watershed drains more than one-quarter of the Earth's freshwater reserves[1] and is home to around 15 million Canadians. With the Canada-U.S. border running through the middle, millions of Canadians and Americans rely on the system for drinking water, transportation, trade and employment as well as tourism and recreation. It also supports some of the richest farmland in North America, provides an important source of power for homes and businesses, and is home to a large variety of plant, fish and animal species.

The Great Lakes and St. Lawrence River system links Central Canada and the American Midwest with the Atlantic Ocean and global markets, and is among the world's most important commercial waterways[2]. More than 180 million metric tons of cargo travels the St. Lawrence every year[3]. This vital transportation corridor is key for marine shipping and the efficient movement of international trade to and from North America.

In Ontario, the economic benefits of the Great Lakes are significant. The Great Lakes Basin is an economic hub helping to generate the majority of Ontario's power and exports, and water for domestic use and manufacturing. The lakes attract tourists and support multi-billion-dollar fisheries and agri-food industries. In fact, sources estimate that the contribution of the fisheries and tourism generated by the Great Lakes is close to $9 billion to the Canadian economy.[4]



The St. Lawrence Drainage Basin
(map courtesy of Environment Canada)

Given the value of this water system to our economy, society and public well-being, the environmental integrity of the Great Lakes and St. Lawrence River Basin is important for all Canadians. The Government of Canada recognizes the importance of these watersheds and is continuing to support significant public infrastructure projects in the region. These projects are improving water quality and helping to protect and conserve this vital natural resource.

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[1] St. Lawrence Action Plan, "Overview of the State of the St. Lawrence River", 2008: www.ec.gc.ca/Publications/1E8CDD4C-114B-41F6-BF90-655085AA5C76%5COverviewStateStLawrenceRiverEN.pdf

[2] Environment Canada : www.ec.gc.ca/stl/default.asp?Lang=En&n=F46CF5F8-1

[3] The St. Lawrence Seaway Management Corporation, 2012: www.greatlakes-seaway.com/en/seaway/vital/index.html

[4] Fisheries and Oceans Canada; Great Lakes Fisheries Commission

History of a Waterway

Access to fresh water has been at the heart of Canadian commerce and population growth since Confederation. In 1909, Canada and the United States established the International Joint Commission to address water issues along the border, including the Great Lakes. The Great Lakes became even more vital in 1959, when the St. Lawrence Seaway was completed, giving inland provinces and states access to the Atlantic Ocean. Today, the International Joint Commission focuses much of its work on the Great Lakes.

The regions near the Great Lakes and St. Lawrence River have always been home to a significant portion of Canada's population. Growth over the years has brought with it increased economic activity. According to an economic study released in October 2011[5], the Great Lakes-St. Lawrence Seaway directly supports over 225,000 jobs and generates billions of dollars in income and revenues annually in both the United States and Canada.

However, the waterway's success has also had negative consequences. The increasing impacts of industrialization, urban development, agricultural activities, increased fishing, and tourism contributed to the environmental decline of the Great Lakes in the mid-1900s and beyond. Recognizing these challenges, Canada and the United States signed the Canada-U.S. Great Lakes Water Quality Agreement in 1972 and made a commitment to restore and maintain the health of the Great Lakes Basin Ecosystem.

Based on this agreement, in the mid-1980s a total of 43 environmental *hotspots* or Areas of Concern were identified in the shared Great Lakes portion of the watershed, including 17 in Canada. For over 40 years through the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA), Canada and Ontario have been working with partners from urban and rural communities, industries and First Nations to restore and protect the Great Lakes. For each Area of Concern in Canada, the federal and Ontario governments partnered with local communities and stakeholders to develop plans to restore and *delist* the affected areas. Investing in wastewater infrastructure in Great Lakes communities is a key part of these plans.

In April 2010, Lake Erie's Wheatley Harbour was delisted as an Area of Concern. As a result of actions to control and improve industrial wastewater treatment and reduce contaminants from agricultural sources, the water quality in Wheatley Harbour has improved significantly. In addition to Wheatley Harbour, two other Canadian Areas of Concern have been delisted – Severn Sound and Collingwood Harbour. Oswego River, an American Area of Concern, has also been delisted bringing the total to four.

"In 2003, when the International Joint Commission issued a status report on Areas of Concern, there were only two delisted sites. Today, with the delisting of Wheatley Harbour, there are four - an indication that progress can be made when local, provincial, state and federal governments work with community organizations like the Essex Region Conservation Authority to achieve the goals of the Great Lakes Water Quality Agreement."

– Joseph Comuzzi, Canadian Section Chair, International Joint Commission

[5] U.S. Department of Transportation, 2011: www.greatlakes-seaway.com/en/pdf/slsdc_pr20111018.pdf

A Promising Future

Effluent from wastewater systems is one of the largest sources of pollution in the Great Lakes and St. Lawrence River. The Government of Canada is taking action to protect these important ecological and economic resources, and Infrastructure Canada is doing its part to support the efforts.

Under the Green Infrastructure Fund, launched in 2009, Canada and Ontario have each committed $174.5 million to help upgrade four important wastewater treatment plants in support of delisting three Areas of Concern: St. Lawrence River, Hamilton Harbour and Nipigon Bay. This is in addition to over $100 million in federal support already committed through other Infrastructure Canada programs, including the Building Canada Fund and the Infrastructure Stimulus Fund, to address wastewater infrastructure in these areas.

The governments of Canada and Quebec have also been working together for over 20 years to safeguard the health of the St. Lawrence River. For example, by separating the storm water and household sewage handling system in Portneuf, the frequency and volumes of combined sewage overflows into the St. Lawrence has been dramatically reduced. Plans are also underway to address combined sewer overflow issues in Montréal through the construction of four new water reservoirs.

Montréal skyline and St. Lawrence River (photo courtesy of Parks Canada, P.-É. Cadorette, 2007)

Upgrading Montréal's wastewater infrastructure

In Montréal, joint federal and provincial investments of $63.7 million at the Jean R. Marcotte treatment plant will improve the disinfection process for wastewater before it is released into the St. Lawrence River. An additional $49.3 million investment from each of the federal and provincial governments will reduce the volume and frequency of overflows from the City of Montréal's combined sewer system during heavy rains.

Since the launch of the Building Canada Plan in 2007, the Government of Canada has committed over $1 billion to more than 700 wastewater projects in the Great Lakes and St. Lawrence water system[6]. These projects are being undertaken in partnership with provincial and municipal governments.

In addition, over $350 million has been allocated to wastewater projects all across Ontario and Quebec under the Gas Tax Fund. Working together, Canada, Ontario, Quebec and municipal partners will continue to strengthen wastewater systems in the region to restore and protect the Great Lakes and the St. Lawrence.

[6] These figures exclude the federal Gas Tax Fund.

"Wastewater management commenced in the 1860's primarily for public health reasons. Over the years, the purposes of wastewater management evolved to take into account environmental health. Today, thanks to the collective efforts of all levels of government, huge improvements continue to be made that will benefit Canadians across the country."

– T. D. Ellison, Interim Executive Director, Canadian Water and Wastewater Association

Examples of Infrastructure Canada-funded projects in Great Lakes Areas of Concern

Red Rock wastewater treatment facility

Nipigon Bay

In the Townships of Red Rock and Nipigon, joint federal-provincial investments of $9 million and $6.9 million respectively will improve the quality of treated wastewater released into Nipigon Bay. They have upgraded their sewage treatment facility by adding a second process that removes or reduces contaminants that were missed in the initial treatment phase. These investments will help to delist Nipigon Bay as an Area of Concern.

City of Cornwall's wastewater treatment facility

St. Lawrence

Investments of $18.5 million from both the governments of Canada and Ontario will increase the capacity of the City of Cornwall's wastewater treatment facility, upgrade the facility by adding a second level of processing to further reduce or remove contaminants and reduce the volume of untreated wastewater being discharged into the St. Lawrence River during heavy rainfalls.

Municipality of Halton, Hamilton Harbour

Woodward Avenue Wastewater Treatment Plant

Hamilton Harbour

The discharge of wastewater containing phosphorus adversely affects fish habitat. As such, investments of $51.5 million from both the Government of Canada and the Ontario government will help the Regional Municipality of Halton improve its wastewater treatment process, to reduce the amount of phosphorus discharged into Hamilton Harbour. The City of Hamilton will also benefit from investments of $100 million from both the federal and provincial governments towards upgrading the municipal wastewater treatment processes at the Woodward Avenue Wastewater Treatment Plant, further assisting remediation of this Area of Concern.

Looking Forward

In Budget 2011, the Government of Canada committed to working with partners to develop a new long-term plan for public infrastructure that extends beyond the expiry of the Building Canada Plan in 2014. On November 30, 2011, the Honourable Denis Lebel, Minister of Transport, Infrastructure and Communities, launched a formal engagement process to develop this plan. On June 1, 2012, Minister Lebel announced a series of roundtables with provinces, territories, municipal organizations and key stakeholders to guide the development of the new long-term plan. This plan will focus on investments in infrastructure that support job creation and economic growth, while building strong, prosperous communities across the country. The continued need for improvement of wastewater infrastructure across Canada will be considered in this context.

Additional information on the Government of Canada's Engagement Process for the development of a Long-Term Infrastructure Plan can be found at: http://www.infrastructure.gc.ca.

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